

the server, the terminal determines whether the protocol address contained in said interrogation request agrees with its own protocol address and notifies the server of its own terminal address if agreement is achieved; and a sixth step in which the server notifies the originating terminal of the terminal address of which it has been notified.

2. The method according to claim 1, wherein said fourth step includes:

a step in which the exchange connects the server with all terminals by PVCs (permanent virtual channels) having identical values; and

a step in which, when a terminal address interrogation request having said identical value for PVC has entered from the server, the exchange performs cell copying, whereby said interrogation request cell is transferred to all terminals.

3. The method according to claim 1, wherein said fourth step includes:

a step in which the exchange connects the server with all terminals by PVCs (permanent virtual channels) having identical values and divides all terminals into a plurality of groups;

a step in which, when a terminal address interrogation request having said identical value for PVC has entered from the server, the exchange performs cell copying, whereby said interrogation request cell is transferred to all terminals in a first group;

a step in which the server performs monitoring to determine whether a prescribed terminal has answered with a terminal address within a set period of time;

a step in which the server sends the interrogation request cell to all terminals of the next group if no terminal answers with a terminal address within the set period of time; and

a step in which the server transfers the interrogation request while successively changing the group until a prescribed terminal answers with a terminal address.

4. The method according to claim 1, further comprising a seventh step in which, when the server receives the answer of the terminal address from the terminal, the server newly stores the corresponding relationship between said protocol address and the terminal address, of which it has been notified, in the address table.

5. The method according to claim 1, further comprising an eighth step in which the server stores, in the address table, the corresponding relationship between the protocol address of the originating terminal and the terminal address which are contained in the terminal address interrogation request received from said originating terminal.

6. The method according to claim 1, further comprising:

a seventh step in which, when the server receives the answer of the terminal address from the terminal, the server deletes a corresponding relationship, referred to least recently, between a protocol address and terminal address if the address memory is full; and

an eight step in which the server newly stores the corresponding relationship between said protocol address and the terminal address, of which it has been notified, in the address table.

7. The method according to claim 1, further comprising a ninth step in which each terminal sends periodically the server an interrogation request for its own terminal's address, whereby the corresponding relationship between its own terminal's protocol address and the terminal address is kept in the address table.

65201234567890

Sub A2

8. A communication system equipped with a plurality of terminals, a server having an address table for storing a corresponding relationship between a protocol address and terminal address of each terminal, and an exchange which accommodates each terminal and the server, wherein each of said terminals comprises:

means for sending a terminal address interrogation request to the server if the terminal address of another party's terminal is unknown at the time of communication;

communication means for communicating with the other party's terminal via the exchange using a terminal address of which it has been notified by the server in response to the interrogation request; and

Terminal address answering means for answering the server with its own terminal address if a protocol address contained in a terminal address interrogation request transferred from the server agrees with its own protocol address; and

said server comprises:

means for referring to the address table and searching for a terminal address corresponding to a protocol address contained in a terminal address interrogation request from a terminal;

means which, if a terminal address corresponding to said protocol address has not been registered in the address table, is for transferring the terminal address interrogation request containing said protocol address to all terminals via the exchange; and

means for notifying the terminal which has issued the interrogation request of a terminal address found from the address table or of a terminal address obtained by an answer from a terminal.

9. The communication system according to claim 8, wherein said exchange comprises:

means for connecting the server with all terminals by PVCs (permanent virtual channels) having identical values; and

means which, when a terminal address interrogation request having said identical value for PVC has entered from the server, is for performing cell copying and transferring said interrogation request cell to all terminals.

10. The communication system according to claim 8, wherein said server has registration means which, when the server receives the answer of the terminal address from a prescribed terminal, is for newly storing the corresponding relationship between a protocol address and the terminal address, of which it has been notified, in the address table.

11. The communication system according to claim 10, wherein when the server receives the answer of the terminal address from the prescribed terminal, said registration

means deletes a corresponding relationship, referred to least recently, between a protocol address and terminal address if the address memory is full.

12. A server in a communication system equipped with a plurality of terminals, the server for managing a corresponding relationship between a protocol address and terminal address of each terminal, and an exchange which accommodates each terminal and the server, said server comprising:

an address table for storing the corresponding relationship between a protocol address and terminal address of each of the plurality of terminals;

search means for referring to said address table and searching for a terminal address corresponding to a protocol address contained in a terminal address interrogation request from a terminal; and

interrogation means which, if a terminal address corresponding to the protocol address has not been registered in the address table, is for interrogating all terminals, via an exchange, for the terminal address corresponding to this protocol address; wherein, in response to receipt of a terminal address interrogation request from an originating terminal, said search means refers to said address table to obtain the terminal address conforming to the protocol address contained in this terminal address interrogation request and, if this terminal address has not been registered, said interrogation means interrogates the terminals for terminal address.

13. The server according to claim 12, further comprising:
means for receiving notification of an answer from a prescribed terminal in response to the terminal address interrogation request; and

registration means for newly registering the corresponding relationship between the protocol address and the terminal address, of which it has been notified, in said address table.

14. The server according to claim 13, wherein when the server receives the answer of the terminal address from the prescribed terminal, said registration means deletes a corresponding relationship, referred to least recently, if said address memory is full, and registers the corresponding relationship between the protocol address and the terminal address, of which it has been notified, in said address table.

15. The server according to claim 12, wherein said terminal address interrogation means divides all terminals into a plurality of groups, interrogates all terminals of a first group for a terminal address and, if notification of answer of a terminal address is not received within a set period of time, interrogates all terminals of the next group for a terminal address.

add b1
add E2
add H1-H10
add

- 66 9207 9464 2460
16. In a network system having a server, the method comprising the steps of:
receiving by the server a terminal address interrogation request including a first address from an originating terminal;
referring by the server to an address table and searching by the server for the second address corresponding to the first address included in the terminal address interrogation request; and
transferring by the server the terminal address interrogation request including the first address to a plurality of terminals.
17. In a network system having a server, the method comprising the steps of:
receiving by the server a terminal address interrogation request including a first address from an originating terminal;
identifying by the server a second address based on the first address included in the terminal address interrogation request sent from the originating terminal; and
transferring by the server the terminal address interrogation request including the first address to a plurality of terminals when the server cannot identify the second address corresponding to the first address based on the first address.
18. The method according to claim 17, wherein the receiving and transferring the terminal address interrogation request uses ATM cells.
19. The method according to claim 18, wherein the identifying step includes:
searching in an address table for the second address corresponding to the first address included in the terminal address interrogation request.

Filed by Express Mail
(Receipt No. EM 367136855 US
on October 26, 1999
pursuant to 37 C.F.R. 1.10
by 

20. The method according to claim 19, wherein the system includes a switch or exchange and wherein the transferring step includes:

a step in which the switch or exchange connects the server with the plurality of terminals by PVCs (permanent virtual channels) having identical values; and

a step in which, when the terminal address interrogation request in the form of a cell and having the identical value for the PVC is entered for the server, the switch or exchange performs cell copying, whereby the terminal address interrogation request cell is transferred to the plurality of terminals.

21. The method according to claim 19, wherein the system includes a switch or exchange, and wherein the transferring step includes:

a step in which the switch or exchange connects the server with the plurality of terminals by PVCs (permanent virtual channels) having identical values and divides the plurality of terminals into a plurality of groups;

a step in which, when the terminal address interrogation request in the form of a cell and having the identical value for PVC is entered from the server, the switch or exchange performs cell copying, whereby the terminal address interrogation request cell is transferred in a first group;

a step in which the server performs monitoring to determine whether a prescribed terminal has answered with its own address within a set period of time;

a step in which the server sends the terminal address interrogation request cell to terminals of the next group when no terminal answers with its own address with the set period of time; and

a step in which the server transfers the terminal address interrogation request while successively changing the group until a prescribed terminal answers with its own address.

00000000000000000000000000000000

22. The method according to claim 19, further comprising:

receiving by the server an answer including a second address corresponding to the first address from one of the plurality of terminals when the first address included in the terminal address interrogation request received by the one terminal is in agreement with its own first address; and

notifying by the server to the originating terminal of the second address corresponding to the first address.

23. The method according to claim 22, further comprising a step in which, when the server receives the answer including a second address from the one of the plurality of terminals, the server stores, in an address table, the corresponding relationship between the first address and the second address, of which it has been notified.

24. The method according to the claim 22, further comprising a step in which, when the server receives the answer including a second address from the one of the plurality of terminals, the server stores the corresponding relationship between the first address and the second address in place of the address table designated by an index value which is calculated based on a value of the first address or the second address.

25. The method according to claim 24, further comprising:

a step in which , when the server receives the answer including the second address from one of the plurality of terminals, the server deletes a corresponding relationship, referred to least recently, between a first address and a second address when the address table is full; and

a step in which the server stores, in the address table, the corresponding relationship between the first address and the second address.

26. The method, according to claim 19, further comprising a step in which the server periodically receives a terminal address interrogation request including a second address

6693012-2724500

from each terminal of the plurality of terminals, whereby the corresponding relationship between the first address of its own terminal and the second address is kept in an address table.

✓27. An address resolution system equipped with a plurality of terminals, a switch or exchange which accommodates each terminal of a plurality of terminals and a server, wherein each terminal of the plurality of terminals comprises:

means for sending a terminal address interrogation request including a first address to the server; and

means for answering the server with its own second address when a terminal address interrogation request including a first address transferred from the server agrees with its own first address; and the server comprises:

means for searching for in an address table the second address corresponding to the first address included in the terminal address interrogation request received from a terminal of the plurality of terminals;

means for transferring the terminal address interrogation request including the first address to the plurality of terminals and

means for notifying the originating terminal of the second address identified with the first address or obtained by an answer including the second address received from a terminal.

✓28. An address resolution system equipped with a plurality of terminals, a switch or exchange which accommodates each terminal of a plurality of terminals and a server, wherein each terminal of the plurality of terminals comprises:

means for sending a terminal address interrogation request including a first address to the server; and

means for answering the server with its own second address when a terminal address interrogation request including a first address transferred from the server agrees with its own first address; and the server comprises:

00000000000000000000000000000000

means for identifying a second address based on the first address included in the terminal address interrogation request sent from an originating terminal;

means for transferring the terminal address interrogation request including the first address to the plurality of terminals; and

means for notifying the originating terminal of the second address identified with the first address or obtained by an answer including the second address received from a terminal.

29. The address resolution system according to claim 28, wherein the switch or exchange comprises:

means for connecting the server with the plurality of terminals by PVCs (permanent virtual channels) having identical values; and

means which, when a terminal address interrogation request call having the identical PCV value is entered from the server, is for performing cell copying and transferring of the interrogation request cell to the plurality of terminals.

30. The address resolution system according to claim 28, wherein the server has registration means which when the server receives the answer including the second address from a prescribed terminal, is for storing the corresponding relationship between a first address and a second address in a place of an address table designated by an index value which is calculated based on a value of the first address or the second address.

31. The address resolution system according to claim 30, wherein when the server receives the answer including the second address from the prescribed terminal, the registration means deletes a corresponding relationship, referred to least recently, between a first address and a second address when a space of the memory is full.

✓ 32. A server comprising:

means for receiving a terminal address interrogation request including a first address from an originating terminal;

search means for referring to an address table and searching for the second address corresponding to the first address included in the terminal address interrogation request; and

means for transferring the terminal address interrogation request including the first address to a plurality of terminals

✓ 33. A server comprising:

means for receiving a terminal address interrogation request including a first address from an originating terminal;

identifying by the server a second address based on the first address included in the terminal address interrogation request sent from the originating terminal; and

means for transferring the terminal address interrogation request including the first address to a plurality of terminals when the server cannot identify the second address corresponding to the first address based on the first address.

34. The server according to claim 33, further comprising:

means for receiving a notification of an answer including a second address from a prescribed terminal in response to the terminal address interrogation request; and

means for newly registering the corresponding relationship between the first address and the second address in a place of the address table designated by an index value which is calculated based on a value of the first address or the second address, in the address table.

35. The server according to claim 34, wherein when the server receives the answer including the second address from the prescribed terminal, the registration means deletes a corresponding relationship, referred to least recently, when the address table is full, and

registers the corresponding relationship between the first address and the second address, of which it has been notified, in the address table.

36. The server according to claim 35, wherein the terminal address interrogation means divides terminals into a plurality of groups, interrogates terminals of a first group for a second address and, when a notification of an answer including a second address is not received within a set period of time, interrogates the terminals of the next group for a second address.

✓37. An apparatus comprising:

a receiver for receiving a terminal address interrogation request including a first address, and notifying a processor of a notification that the terminal address interrogation request has been received;

the processor for notifying a transmitter of a transmission request for transferring the terminal address interrogation request to a switch or exchange, based on the notification sent from the receiver; and

the transmitter for transmitting the terminal address interrogation request with a prescribed destination address for multicasting, based on the transmission request sent from the processor.

38. The apparatus of claim 37, wherein the receiver and transmitter communicate with a switch or exchange using ATM cells.

39. The apparatus of claim 38, further comprising an address table for storing a corresponding relationship between a first and second address of each terminal, wherein, when the processor searches in said address table for the second address corresponding to the first address included in the terminal address interrogation request and obtains the second address, the processor notifies the transmitter of an answer including the second address for transmitting to the originating terminal, the transmitter

CONTINUED - 1026695

transmits the answer including the second address to the originating terminal via the switch or exchange, based on the answer sent from the processor.]

SH/mad/16503

add A4>

add E2>